

## Safety Documentation

Please select the forms you require by selecting the check boxes below.  
You can select more than one.

**Risk Assessment**

**Method Statement**

**Chemicals COSHH**

Once you have made your selections, scroll down and complete the forms.

**Buttons:** [+ ] will add a row to a list [-X] will delete a row from a list

You may save this file to a local drive at any time.

When you have finished, save the file to a local drive and email it to your supervisor for authorisation.

**Supervisors** - There is a sign-off section at the end of the document set that must be completed.

**Staff may "self authorise", (as a supervisor), but the forms must still be submitted to the DSO for approval.**

### **IMPORTANT:**

YOU ***MUST NOT*** START ANY PRACTICAL WORK UNTIL THESE FORMS HAVE BEEN RETURNED TO YOU  
WITH **BOTH** YOUR SUPERVISOR'S AND DSO'S APPROVAL SIGNATURES ATTACHED.

### Please complete these fields

School or Service	<input type="text" value="Centre for Biological Engineering"/>
Department	<input type="text"/>
Originator name	<input type="text" value="Jen Bowdrey"/>
email address	<input type="text" value="cgjb2@lboro.ac.uk"/>
Location	<input type="text" value="H23, H25 and H29 CBE, Holywell Park and T208b Wolfson School"/>
Project / Activity / Task	<input type="text" value="Use and Maintenance of the Heracell Incubators"/>
Supervisor Name	<input type="text" value="Carolyn Kavanagh"/>

## Risk Assessment

Reference

Location  Originator

Project / Activity / Task

Is this process risk assessment for a :  Laboratory / Workshop  General use

Category 1: Machinery & work equipment:				
Design and Construction	Mechanical hazards	Electrical hazards	Radiation hazards	
N/A	N/A	Electrical test cables current		+
		Direct contact		X
Category 2: Workplace				
Localised hot surfaces				X
Falling/moving objects/materials				X
Slips/Trips/Falls on the level				X
Category 3: Hazardous and/or Harmful substances				
High pressure gas				X
Copper sulphate solution				X
Biological substances (Infection)				X
Substances at high temperature				X
Category 4: Work activity				
Stressful posture				X
Lone working out of hours				X
Category 5: Work organisation				
N/A				X

Explain the risks associated with these hazards				
People / Groups at risk	<input type="text" value="Operator and other lab users using the incubator"/>			X
Enter risk details here:-	Impact	Probability	Risk Score	
<input type="text" value="Biological substances- cells being grown in incubator"/>	<input type="text" value="Slightly Harmful"/>	<input type="text" value="Highly Unlikely"/>	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	

## Process Risk Assessment Form (Continued)

All biological material has good provenance .All biological material has an approved Biological Risk assessment, so all risks have been assessed and understood by the user.	Moderately	Moderately	x	
If there is a spill in the incubator- see spill SOP038 and also notify lab leader as incubator may need to be decontaminated.	Slightly	Slightly	x	
All biological material is enclosed in flasks with secure lid	Significantly	Significantly	x	
All flasks and plates which are placed in the incubator are surface decontaminated beforehand.	Significantly	Significantly	x	
				Residual Risk
				Low
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
High Pressure gas	Harmful	Highly Unlikely	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	
High pressure gas is controlled through the use of gas regulators. This effectively reduces the pressure to harmless levels. Only trained competent individuals touch the regulators.	Moderately	Moderately	x	
				Residual Risk
				Low
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
Electrical Hazards- risk of electrocution	Harmful	Unlikely	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	
All incubators are PAT tested every two years and are CE marked. Leads are routinely checked.	Significantly	Significantly	x	
				Residual Risk
				Low
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
Stressful posture	Slightly Harmful	Highly Unlikely		
What are the control measures?	Lowers Impact	Lowers Probability	+	
The incubator is close to the floor, could cause a stressful posture whilst cleaning- take regular breaks and ask for help if required.	Slightly	Slightly	x	
				Residual Risk
				Low
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
Lone working	Slightly Harmful	Likely	Medium	
What are the control measures?	Lowers Impact	Lowers Probability	+	

## Process Risk Assessment Form (Continued)

All users have an out of hours risk assessment and are not permitted to work out of hours until fully trained. All users use the lone working app when working out of hours.	Moderately	Moderately	x	
Dcontamination not started out of hours	Moderately	Moderately	x	
			Residual Risk	
			Low	
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
Injury from hot surface	Slightly Harmful	Highly Unlikely		
What are the control measures?	Lowers Impact	Lowers Probability	+	
All users wear PPE when using the incubators	Significantly	Significantly	x	
Incubators are kept at constant 37C temperature for normal use	Moderately	Moderately	x	
All Users are trained how to use incubators	Moderately	Moderately	x	
			Residual Risk	
			Low	
People / Groups at risk	Operator and people in proximity			x
Enter risk details here:-	Impact	Probability	Risk Score	
Falling objects from incubator	Slightly Harmful	Highly Unlikely		
What are the control measures?	Lowers Impact	Lowers Probability	+	
All users are trained how to stack and store flasks and plates in the incubator	Moderately	Moderately	x	
Incubators have a glass inner door so items will not fall out of incubator and user can see through inner door if a flask is in a precarious position.	Moderately	Moderately	x	
			Residual Risk	
			Low	
People / Groups at risk	Operator only			x
Enter risk details here:-	Impact	Probability	Risk Score	
High Temperature (90C) used for decontamination cycle	Harmful	Highly Unlikely	Low	
What are the control measures?	Lowers Impact	Lowers Probability	+	
There are digital displays on th front of the incubators which show the internal temperature and also the time remaining for the decontamination cycle.	Moderately	Moderately	x	
Only trained staff perform the decontamination cycle	Moderately	Moderately	x	
While the incubators are in decontamination cycle a sign is placed on the door to stop people using the incubator	Slightly	Slightly	x	
			Residual Risk	
			Low	
+ Add another Risk				

## Process Risk Assessment Form (Continued)

Personnel Group	Maximum (Task setup/ Re-configuration)	High (Performing the task)	Medium (Observing the task)	Low (Present, but not involved)	Lone Working (Out of hours)	No Exposure Permitted	Total
-----------------	---	-------------------------------	--------------------------------	------------------------------------	--------------------------------	-----------------------	-------

Who may be at risk as a result of this activity?

Personnel Group	Maximum (Task setup/ Re-configuration)	High (Performing the task)	Medium (Observing the task)	Low (Present, but not involved)	Lone Working (Out of hours)	No Exposure Permitted	Total
Academic Staff	0	0	0	0	0	0	0
Technical Staff	1	0	0	0	0	0	1
Research Staff (PDRA)	0	0	0	1	0	0	1
Research Students (PhD)	0	1	0	2	1	0	4
Students (Undergraduate / MSc)	0	0	0	0	0	0	0
Visitors	0	0	0	0	0	0	0
Others - Over-type as needed	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>6</b>

With these controls in place, the risk is:

**The activity is LOW RISK - and is effectively controlled**

## Safety Method Statement

 Reference SAF/MM/6552

 Location H23, H25 and H29 CBE, Holywell Park and T208b Wolfso Originator Jen Bowdrey

 Project / Activity / Task Use and Maintenance of the Heracell Incubators

What equipment will be used in this activity?	<b>+</b>
Co2 Incubator 150i ( T208b, H23, H25 and H29)	<b>X</b>
Co2 Incubator Heracell 150i Hypoxic	<b>X</b>

What training must be completed to do this activity?	<b>+</b>
Lab user training and lab leader training	<b>X</b>
Training from designated person for decontamination of incubators	<b>X</b>

What chemicals are being used? (These must be included in the COSHH Form)	<b>+</b>
Copper Sulphate	<b>X</b>
1 in 50 Chemgene ( COSHH MEME 654 CBE 334 )	<b>X</b>
70% IMS ( COSHH MEME 655 CBE 335)	<b>X</b>
co2 (COSHH MEME 538)	<b>X</b>
n2 ( COSHH MEME 538)	<b>X</b>

Spill and accident procedures.	<b>+</b>
See spill SOP038 and follow stated procedures. All Accidents should be reported through the University online system.	<b>X</b>
See COSHH forms for specifics for each chemical	<b>X</b>

Procedure in the event of an emergency. (How to leave the process in a safe condition in such an event)	<b>+</b>
In the event of emergency close the incubator doors and exit lab.	<b>X</b>

References.	<b>+</b>
SOP038- Biological Spill Response	<b>X</b>
1 in 20 and 1 in 50 Chemgene COSHH ( COSHH MEME 654 CBE 334)	<b>X</b>
70% IMS COSHH ( MEME 655 CBE 335)	<b>X</b>
Copper sulphate solution COSHH	<b>X</b>
SOP114 Use and Maintenance of the Heracell Incubator	<b>X</b>
Co2 (COSHH MEME 538)	<b>X</b>
N2 ( COSHH MEME 538)	<b>X</b>

### Detailed sequential description of the process

Process step	Precautionary measures and comments	
Incubators are set to 37C and 5% CO2. Check screen for errors.		<b>X</b>

## Safety Method Statement (Continued)


Process step	Precautionary measures and comments	+
Please refer to SOP114 Use and Maintenance of the Heracell Incubators	Wear gloves	X
To access incubators, open outer door, and then open the inner door. Place flask/plate onto a shelf ensuring lid is tight and it has been surface decontaminated.	Do not leave the doors open, as this will cause the temperature, humidity and CO2 concentration to drop.	X
To close the incubator, shut the inner door and make sure it is fastened, close outer door.	Make sure that both doors are firmly closed.	X
Weekly checks- As part of the weekly housekeeping, check water levels in the bottom of the incubator, check for the cleanliness of shelves and water. As this maybe a sign of infection and also check that the CO2 concentration and temperature is correct. Check that it smells ok.	This is done to maintain the correct conditions for the cells. It needs to be checked for cleanliness to ensure nothing has been spilled or is growing as a way to prevent introducing infection in to the cells. If it starts to smell off, the water needs changing and the incubator needs to be cleaned.	X
The on/off switches can be found at on the lower left hand corner of the incubator.	The incubators are only turned off, when the CBE is in shut down, for example over Christmas, or when the incubator will not be used for a period of time.	X
Decontamination of incubators		X
For all the incubators, the reservoirs need to be emptied.	A pump/beaker is needed to remove the water from the reservoir as trays are not removable. Pour down the sink with plenty of water. The copper sulphate left will be trace amounts due to evaporation and dilute concentration.	X
The shelves are removed, and the inside of the incubator is wiped down with 1 in 50 Chemgene, followed by 70% IMS. Both doors also need to be wiped down, along with the shelves and any other internal attachments.	Wear PPE, safety glasses and gloves Once it is turned back on, wait for the temperature to start to increase before leaving the lab.	X
For the decontamination procedure - 450ml of de-ionised water is placed in the bottom and the decontamination program is run. This takes 24hrs to complete. Once complete - remove water and top up with fresh de-ionised water and copper sulphate ( 1g per 1L).		X
The stand alone Heracell 150I incubator in H25 can be used as a hypoxic incubator. To change the settings refer to user manual. The nitrogen gas inlet in H25 needs to be turned on. It needs to be turned off when finished.	A sign must be displayed to indicate change of use and other users informed. Laboratory management must be informed in advance to ensure N2 supply.	X

## COSHH Form

 Reference 

 Location  Originator 

 Project / Activity / Task 

<b>CHEMICAL NAME</b>								Hazard Rating <input type="text" value="High"/>		OVERALL RISK: <input type="text" value="Medium"/>	
<input type="text" value="Copper Sulphate"/>		Amount used		Period of use (hrs)		The process is:		Physical State			
CAS No. <input type="text" value="7758-98-7"/>		<input type="text" value="1"/> <input type="text" value="g"/>		<input type="text" value="1"/>		<input type="text" value="Open"/>		<input type="text" value="Non-Volatile Liquid"/>		<input checked="" type="checkbox"/> Eyes <input type="checkbox"/> Skin <input type="checkbox"/> Inhaled <input checked="" type="checkbox"/> Ingested	
W.E.L. (Itel / stel) <input type="text"/>											

Hazard Statement and Description	Precaution Statement and Description	
H302 Harmful if swallowed.	P280 Wear protective gloves/protective clothing/eye protection/face protection.	X
H305 May be fatal if swallowed and enters airways.	P302 + P352 IF ON SKIN: Wash with plenty of soap and water.	X
H319 Causes serious eye irritation.	P273 Avoid release to the environment.	X
H410 Very toxic to aquatic life with long lasting effects.	P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.	X
	P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do.	X
	P330 Rinse mouth.	X
How will the precautions listed above be implemented?		
Trained staff. Lab coat, Gloves, Safety glasses are worn. The fluid in the incubator is not handled once in place until the incubator requires cleaning/sterilisation. Eye wash stations in all change areas. Hand wash facilities in all labs. Seek medical attention if swallowed.		
Special Storage and Containment Measures	Disposal Method	
Stored in chemical cabinet in sealed container in well ventilated lab.	Volume reduced by evaporation. Very dilute solution in water tray. Disposed of to sink with plenty of water. Copper sulphate disposal in powder form would be disposed of through University hazardous waste procedures.	X
How will spillages be dealt with?		
Follow procedures in SOP038. Use of chemical spill kit . Dilute solution spillage would be cleaned up using absorbent material and placed in yellow waste bags for incineration.		

[+ Add another chemical](#)

### Statement of work (Process to be undertaken)



Personal protection requirements not covered in the precaution statements above.



## COSHH Form (Continued)

Sources of information and references

ThermoFisher SDS sheet

Reference to **existing approved** Risk Assessment

With the current controls, the risk of using these chemicals is: Medium

Supervisor to check that the process involving the safe use of these chemicals has been satisfactorily evaluated

### Supervisor and Departmental Safety Office (DSO) Sign-off.

#### Supervisors

Please check the documents above and if you want to approve them:

- 1) Electronically sign this document
- 2) Save it to a local drive (You will be prompted to do this)
- 3) eMail the signed document to the DSO.

#### DSO

Please review the documents above and if you want to approve them:

- 1) Enter the reference numbers as appropriate
- 2) Electronically sign this document
- 3) Save it to a local drive (You will be prompted to do this)
- 3) eMail the signed document to the originator

#### **IF YOU DO NOT WANT TO AUTHORISE THE FORMS,**

Please do not sign the form, but click the "Not Approved" check-box and return it to the originator by email stating why and what you expect them to do to put it right in the comments box below.

Not Approved

Supervisors Signature

#### Form Reference Numbers

Risk Assessment

SAF/MM/6552

Method Statement

SAF/MM/6552

COSHH Assessment

SAF/MEME/765

DSO Signature

#### **This document set must be reviewed and re-approved at the following times:**

- 1) After the first occurrence of the activity described above (Review only)
- 2) After any change to the procedure or reagents used
- 3) After any incident resulting from this activity
- 4) At least annually from the date of approval

Next Review:

29/07/2021

Review comments